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Bell Labs Innovations

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December 13, 1999

Ms. Magalie Roman Salas
Office of the Secretary
Federal Communications Commission
The Portals
445 Twelfth Street, S.W., Room TW-A325
Washington, D.C. 20554

RE: WT Docket 99-168

Dear Ms. Salas,

Lucent offers the following input to the ongoing discussion of service rules for the 700 MHz band. Specifically, Lucent addresses the issue which seeks to accommodate two credible needs; the need for protection of the public safety channels from interference and the need to assure the usability of the adjacent CMRS band through the designation of emission masks that are reasonable.

In comments submitted by Bell Atlantic Mobile Systems (BAM) at its recent *ex parte* meeting with the Commission, Lucent offered its view that the level of interference proposed for the public safety segment of the 700 MHz band was extraordinarily stringent, and severely impacted the viability of CMRS in the remaining portion of the band. It is Lucent's conclusion that the use of commonly available filter technology to reduce out of band emissions from CMRS into public safety to the proposed level would require the presence of large guard bands that would render up to 50% of the allocation for CMRS unusable.

Lucent has continued to examine the impact of the proposed public safety requirement on the CMRS allocations. As has been noted in this proceeding, the same interference scenario that is of interest here already exists in the juxtaposition of the 866-869 MHz public safety and 869-894 MHz cellular band. Notwithstanding claims that the presence of high power carriers from cellular base stations could present interference in public safety mobile receivers, Lucent suggests that this arrangement has been in place for some time with cellular operations constrained by a standard emissions mask (ITU Category A) which limits out of band energy to –13 dBm/100 kHz up to 5 MHz outside of the allocated spectrum. The introduction of a new requirement that is over 30 dB more stringent than that in place and, importantly, severely constrains the use of the adjacent commercial band is unwarranted.

Indeed, in its December 7th *ex parte* presentation before the Commission, Motorola describes a zone of interference that could exist around a wideband wireless transmitter and suggests that zone would be about 550 feet at the worst case location at the edge of the public safety area. Moreover, the presentation appears to indicate that the public safety receiver would have to be as close as 270 feet from the wideband transmitter for complete communications blockage. Given that antenna heights of CMRS cell cites are more than 100 feet, this worst case situation would occur only if the public safety receiver were extremely close to the transmitting antenna. Again the use of an emissions mask to mitigate this type of situation, at the expense of the usability of a portion of the CMRS band, is unwarranted. Motorola's material also cites in-building wideband transmitters as a possible source of interference. To the extent that it is believed that these very low power transmitters might practically present difficulties to public safety receivers, this situation should be further evaluated before a decision is made that would severely impact the viability of the CMRS portion of the band.

Lucent agrees with Motorola's suggestion that there may be merit in considering a reversal of the directions of transmission proposed for the public safety allocations (and leaving the direction of the CMRS bands as originally proposed). This would relieve the troubling situation of interference from the high power, commercial base station transmitter into the sensitive public safety receiver. It must be recognized, however, that this reversal of directions exposes public safety mobile receivers to interference from adjacent commercial mobile transmitters. Although the power associated with these transmitters is considerably less than that found in base stations, the number of mobiles is of course large, and the probability that mobile transmitters would be found where public safety reception is required, such as the scene of an accident, is likely.

The Commission may also wish to consider any remedies that might be available within the public safety system design that might be used to control interference. At a minimum, public safety radios, if subject to interference in a given channel, should be able to seek out an available channel with acceptable quality of transmission as is common today in many radio systems.

Lucent appreciates that public safety communications are critical and deserve protection. However, the FCC must balance realistic technical limitations against public interest concerns in allocating spectrum and establishing service rules in this band. Thus, Lucent believes the existing emission limits will adequately protect public safety interests and that the usability and, therefore, the value of the CMRS allocations should not be compromised through adoption of an overly restrictive emissions limit.

An original and a copy of this notice are being submitted to the Secretary of the Commission.

Sincerely,

George I. Zysman